Dalton (H. C.)

Cases of penetrating stab wounds of the abdomen

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CASES OF PENETRATING STAB WOUNDS OF THE ABDOMEN; LAPAROTOMY; RESULTS.

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I report to-day six cases of laparotomy for penetrating stab wounds of the abdomen in which the viscera were injured, one death and five recoveries.

Case 1. Wound of Descending Colon and Ileum; Laparotomy; Recovery.—Edward T., colored, æt. 16, was admitted to the City Hospital July 23, 1890. Two hours previous he was stabbed with a long, narrow-bladed "chicken knife."

The wound of entrance was quite small and situated in the left iliac region, near the free extremity of the twelfth rib. Two inches of omentum protruded. The patient's general condition was excellent; there was but little pain; pulse 62, respiration 23, rectal temperature 100° F.

Percussion gave dulness in the left lumbar and iliac regions. The liver dulness was greatly diminished.

After thorough antiseptic precautions, an incision 4 inches long was made in the left linea semilunaris. Considerable blood and fæcal matter were found in the cavity. There were two holes in the descending colon and one in the ileum. The holes were closed by continuous iron-dyed silk sutures, the blood and fæces washed out, and the abdomen closed. A rubber drain was left in the wound. Recovery was uneventful. Patient was discharged well eleven days after admission.

Case 2. Wound of Mesentery; excessive Hæmorrhage; Laparotomy; Recovery.—Nathan B., æt. 29, admitted October 1, 1889, was stabbed an hour before admission, intestines protruding immediately upon receipt of the injury. In this condition he ran four blocks up a high hill with his assailant close upon his heels.

When admitted he was in profound shock, pulse 120 and quite weak, extremities cold; cold perspiration on forehead, temperature subnormal. Examination showed a mass of intestines (ascending colon and small intestine) protruding from a wound in the right hypochondriac region in the axillary line, 3 inches from the costal border. The mass was blue, almost black, and covered with dirt.

After thoroughly washing the intestines the wound was enlarged to the extent of 4 inches. A gash 2 inches long was found in the mesentery. One of the large vessels of the same was cut and bleeding profusely. This was tied, the wound in the mesentery closed with a continuous catgut suture, a large amount of blood washed from the peritoneal cavity, and the wound closed. A glass drainage tube was left in the wound. The tem-

perature rose to 104° F. on the next afternoon, after which his recovery was uninterrupted.

Case 3. Wound of Cæcum; Fæcal Entravasation; Laparotomy; Recovery.—William W., colored, æt. 15, bootblack, admitted October 7, 1889. He was stabbed two hours before admission. His pulse was 80, small and soft; temperature 99.8° F., respiration 24; general condition excellent.

The knife penetrated an inch internal to, and a little above, the right anterior superior spine of ilium. An incision 2 inches in length was made at the site of the wound in the right linea semilunaris. A large ragged hole was found in the cæcum, as well as a considerable amount of blood and fæcal matter in the iliac and pelvic regions. The hole in the gut was closed by interrupted silk sutures, the blood and fæces washed out, and a glass drainage tube, reaching to the bottom of the pelvis, was left in the lower angle of the wound. The patient made a rapid recovery, temperature never going higher than 101° F.

Case 4. Wound of Descending Colon; Laparotomy; Septic Peritonitis; Death.—John W., æt. 27, admitted November 18, 1889. An hour before admission he was stabbed in the left lumbar region. Three inches of omentum protruded. The wound was enlarged sufficiently to allow of the return of the omentum, and an examination with the finger. No visceral wound could be detected by the touch. Patient's general condition was so good (pulse 80, temperature normal, respiration 20), that I was led to believe the intestines were uninjured, hence did not perform laparotomy.

The next morning, fifteen hours after the receipt of the injury, I was mortified to find my patient's abdomen distended, pulse and respiration fast, temperature elevated, and pain great. In fact, septic peritonitis was in full blast. I

now did what I should have done at first, *i. e.*, made a free opening in the left linea semilunaris. The intestines were quite inflamed and adherent, blood and fæces surrounded the colon, and a large irregular hole was found in the posterior portion of the latter. This was closed and the abdomen washed out. But it was too late, for my patient never rallied, and died in a few hours from shock and peritonitis—the result of my timid, vacillating, unsurgical policy. Had I boldly opened the abdomen and made an *ocular* inspection, as I have since done in *every* case of penetrating stab wound, I believe a life would have been saved, and your reporter saved from making this humiliating confession.

I have condemned, and still condemn, Senn's hydrogen gas test in gunshot wounds of the abdomen, but in this case I am persuaded it would have been wise to resort to its use, as I believe it would have given affirmative results.

Case 5. Wound of Liver and Stomach; Laparotomy; Recovery.—Dred M., colored, æt. 18, admitted September 1, 1890. Two hours before admission he was stabbed in the abdomen. His condition was good, rectal temperature 100° F., pulse 72, respiration 32. He complained but little of pain.

The wound (a small one) was situated 3 inches above, and 2 inches to the right of, the umbilicus. An incision was made from the ensiform cartilage to the umbilicus. A wound ¾ of an inch in length was found on the upper surface of the liver, 2 inches from its lower border. Another wound of similar size was found on the under surface of the liver, separating the organ from a portion of the neck of the gall bladder. A third hole was found in the anterior portion of the stomach, near its pyloric end.

The wound on the upper surface of the liver was closed by a single heavy catgut suture. The suture was introduced ¾ of an inch from the wound, passed deeply into the liver substance, and out again ¾ of an inch on the opposite side. To close the lower wound a suture had to be passed into the peritoneal coat of the gall-bladder and deep into the liver substance. The hole in the stomach was closed by three interrupted silk sutures. A considerable amount of fluid and dark clotted blood was washed from the belly cavity. In spite of the fact that the apposition was good between the gall-bladder and liver, there was considerable oozing of blood from this point. To control this about 30 inches of gauze, 2 inches wide, was packed around it, the ends of the strips were left protruding from the upper angle of the median incision. The surgical wound was closed by interrupted silk sutures.

The operation lasted three-quarters of an hour. Two hours after the operation the pulse was 84, rectal temperature 100° F., respiration 26. Little if any shock followed the operation. The gauze was removed on the second day and the drainage hole closed. He was not allowed to swallow water till the fourth day, except occasionally to wet his lips. Water and food were given per rectum. He was given fluid food per orum on the seventh day.

The patient recovered rapidly. His temperature never exceeded 101.4° F.; his pulse-rate was never over 100.

Case 6. Stab Wound of Liver and Intestine; Laparotomy; Recovery.—August F., æt. 21, bartender, was admitted August 21, 1890. He received three penetrating stab wounds an hour and a half before admission to the hospital. One wound was an inch below the costal border, and

4 inches to the left of the median line. Three inches of omentum protruded from this wound. The second was an inch above and 2 inches to the right of the umbilicus. The third was situated in the seventh interspace in the right axillary line. The patient was suffering greatly from shock; temperature subnormal; pulse 100 and weak; respiration 30.

The wound on the left side was enlarged to 3 inches, the omentum returned, and the intestine in the locality examined and found uninjured. The wound to the right of the median line was enlarged and a ragged hole of good size was found in the jejunum. This was closed by four interrupted silk sutures. As there seemed to be no fæcal extravasation, and but little blood, I did not wash out the peritoneal cavity, but contented myself with sponging the intestines in the neighborhood of the wound.

By slightly enlarging the thoracic wound I was enabled to determine that the liver was cut. A considerable quantity of dark blood followed the withdrawal of the finger. In order to reach the wound in the liver I resected 4 inches of the seventh rib, and split up the diaphragm 3 inches. This gave me a good view of the hepatic wound. There was considerable hæmorrhage from this point. By introducing a sponge on a long holder I managed to remove a good deal of clotted blood from this locality. The liver wound was an inch in length and about 2 inches deep. This was closed by one deep, heavy catgut suture, care being taken to introduce and withdraw the needle at least ¾ of an inch from the margins of the wound. Unless a good portion of the liver is thus involved in the suture, the latter will cut its way through when tied. For this reason, also, care was taken not to continue the tightening of

the suture after the margins of the wound were approximated. The diaphragmatic and cutaneous wounds were closed by continuous catgut sutures. The closure of the wound of the diaphragm was rendered quite difficult in consequence of its movements during respiration. Drainage was not used. The operation lasted an hour and a half.

For three days the patient's pulse-rate remained at about 120, his temperature 102° F., and respiration 30. From this time on his recovery was uninterrupted. There was no peritonitis nor pleurisy. He was discharged well September 20, 1890.

I believe I made a mistake in this case in not making a median incision. I could then have closed the parietal peritoneum on each side, and could have accomplished all I did by the two incisions. By making the latter I doubled his chances for a ventral hernia. I fancy, however, there are few of us who cannot look back after an operation and see where we could have done better.

One point I desire to lay particular stress upon, *i. e.*, that in all penetrating stab wounds it is our bounden duty to go to the *bottom* of such wounds and *see* what damage has been done. It will not do to do as I did in the above fatal case, trust to the introduction of the finger and the *tactus eruditis*. Nor will it do to trust to the patient's general condition, for we have many times seen cases of gunshot and stab wounds with seemingly no perturbation, when in fact the patients were fatally injured.

Should a stab wound penetrate the thorax inferiorly, and in a downward direction, it behooves us to enlarge the wound sufficiently, even if we have to resect a rib, to enable us to determine whether or not the diaphragm has been penetrated. Should such be the case we should open the abdomen as near the site of penetration as possi-

ble. In other words, act as we should do when the peritoneum is penetrated through the abdominal wall. With perfect asepsis we can risk a great deal in abdominal operations. I believe it adds but little risk to a case of penetrating stab wound to enlarge it sufficiently to give us an *ocular* inspection of the parts beneath. It will not do to *guess* in such cases.

Since reporting my last cases of stab wounds I have operated eight times in cases in which there were no visceral injuries, all the patients recovering without an untoward symptom.

I would not be willing to place implicit confidence in the Senn gas test in such cases. Having been once deceived by it, I naturally doubt its infallibility.

Up to date I have done twenty-three laparotomies for penetrating stab wounds of the abdomen, with three deaths and twenty recoveries.